

Introduction

Intracranial meningiomas represent a diverse group of lesions that can occur throughout the intracranial compartment. Previously, a consistency grading scale has been developed to allow for more-standardized reporting of tumor characteristics. This scale, ranging from 1 (extremely soft tumor which is debulked with suction alone) to 5 (extremely firm, calcified tumor in which the capsule does not fold), provides a means by which to compare these heterogeneous tumors. This study aimed to determine the influence of intraoperative meningioma consistency on extent of resection.

Methods

Fifty-nine patients underwent resection of an intracranial meningioma at a single institution over the course of 4 years. Resections were performed via either a transcranial approach or an endoscopic transsphenoidal approach. Each tumor was given a consistency grade by the primary surgeon based upon the established consistency scoring scale. The extent of resection was classified as either a gross total resection or subtotal resection based upon postoperative magnetic resonance imaging.

Conclusions

There was a significant difference between the average tumor consistency score in gross total resections when compared to subtotal resections. The inherent consistency of a meningioma is therefore an important factor in determining the extent of resection achieved by surgery.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe intracranial meningioma consistency using a validated, standardized scoring system, 2) Understand how meningioma consistency is related to extent of resection, 3) Describe the importance of communicating with patients regarding tumor consistency and expected extent of resection.

Results

Of 59 patients, 40 (67.8%) had gross total resection whereas 19 (32.2%) had subtotal resection. An independent-samples T-test was conducted to compare the consistency grading within these groups. There was a significant difference between the gross total resection group (mean consistency score 2.85, range 1-4, standard deviation 0.74) when compared to the subtotal resection group (mean consistency score 3.42, range 2-5, standard deviation 0.77) (p=0.008).